Climate Change Research Program

ICARP Technical Advisory Council – October 12, 2018

CALIFORNIA
STRATEGIC
GROWTH
COUNCIL

THE PROGRAM

- This competitive grant program is funded through the California Climate Investment Initiative (GGRF Fund), and will distribute:
  - **Round 1**: $10.5 million – ***awarded in July, 2018***
  - **Round 2**: $17.2 million – ***to be awarded in December, 2018***
- Supports research conducted by UCs, CSUs, National Labs, and Private Colleges and Universities that reduce carbon emissions and emphasizes California, including:
  - Clean energy
  - Adaptation and resiliency

Research Investment Plan

Guides how the Program invests in research:


Climate Change Research Program

RESEARCH INVESTMENT PLAN

CALIFORNIA CLIMATE INVESTMENTS
Cap and Trade Dollars at Work

CALIFORNIA STRATEGIC GROWTH COUNCIL

Updated August 30, 2018

Program information can be accessed at: http://sgc.ca.gov/programs/climate-research/

To sign up to receive notices, updates, and information regarding the Climate Change Research Program (and other SGC grant programs and initiatives), visit the Strategic Growth Council (SGC) website and click on the "Sign Up for Updates" icon at: http://sgc.ca.gov.

To receive a hardcopy of this Plan, please contact the SGC at research@sgc.ca.gov or (916) 327-5362.

- Seven program goals
- Five research priority areas
- Three types of awards
- Demonstrates connections between researchers and non-traditional research partners
- Identifies GHG emission reductions
- Benefits disadvantaged or low income communities
- Outlines a two-phased submission review process
- Revisited at least every three years.

Research Investment Areas

1. Support and Protect Vulnerable Communities from the Impacts of Climate Change
2. Accelerate and Support Transitions to Climate Smart Communities
3. Integrate Land Use, Conservation, and Management into California Climate Change Programs
4. Increase Data Accessibility and Planning Support for State, Local, and Regional Climate Change Planning
5. Low-GHG Transformative Technology Development and Deployment

ROUND 1 COMPETITION

Researchers competed for two types of awards:

- ***Project Grants:*** *$100,000 - $1,000,000 to an individual or research group to examine a specific research topic.*
- ***Partnership Grants****: $1 to $4 million to a research consortia, center or institute to study a broader research themes.*

Funding was made available for research proposals focused on the first four Research Priority Areas:

- *Vulnerable Communities, Climate Smart Communities, Managing Land Use and Conservation, and Data Accessibility and Planning Support*

Meaningful Engagement criteria comprised 35% of each proposal's review:

- *Community Engagement, Relationship Building, Assistance/Resources and Partnerships*

RESEARCH PROPOSALS

69 PROPOSALS – $87 MILLION

48	Project Grants
21	Partnership Grants
69	**PROPOSALS**

Average Grant Request: $1,263,601

16	CSUs
2	National Labs
6	Private Universities
45	UCs
69	**PROPOSALS**

32 ADVANCING PROPOSALS - $44.3 MILLION

SUBMITTED	ADVANCED	PERCENT ADVANCING	DESCRIPTION
48	**21**	43.8%	Project Grants
21	**11**	52.4%	Partnership Grants
69	**32**	**46.4%**	**TOTALS**

16	**7**	43.8%	CSUs
2	**1**	50.0%	National Labs
6	**1**	16.7%	Private Universities
45	**23**	51.1%	UCs
69	**32**	**46.4%**	**TOTALS**

PARTNERSHIP AWARDS – THREE PROJECTS

INSTITUTION	PRINCIPAL INVESTIGATOR	PROPOSAL TITLE	REQUEST	AWARD
University of California, Davis	Daniel Sperling	**Climate Smart Communities Consortium**	$3,999,240	$2,632,000
San Diego State University	Rebecca Lewison	**Integrated Land Use Planning to Support Climate Resilient Ecosystems and Local Communities: Fire, Water, and Biodiversity**	$2,720,244	$1,791,000
University of California, Los Angeles	George DeShazo	**Measuring the Impacts of Climate Change on Vulnerable Communities to Design and Target Protective Policies**	$2,205,609	$1,451,460

PROJECT GRANTS – SEVEN PROJECTS

INSTITUTION	PRINCIPAL INVESTIGATOR	PROPOSAL TITLE	AWARD
California Polytechnic State University, San Luis Obispo	Michael McCullough	**The Future of San Joaquin Valley Agriculture Under Climate Change and Surface Groundwater Management Act**	$ 541,362
Lawrence Berkeley National Laboratory	Max Wei	**CAL-THRIVES: A California Toolkit for Heat Resiliency In Vulnerable Environments**	$ 1,000,000
University of California, Berkeley	Rachel Morello-Frosch	**Sea Level rise, Hazardous sites, and Environmental Justice in California**	$ 688,168
University of California, Berkeley	Maggi Kelly	**Increasing Data Accessibility and Climate Resilience Planning Support through Cal-Adapt**	$ 825,853
University of California, Berkeley	Karen Chapple	**Examining the Unintended Effects of Climate Change Mitigation: A New Tool to Predict Investment-Related Displacement**	$ 558,914
University of California, Los Angeles	Stephanie Pincetl	**Coupling Community Knowledge with Big Data Tools to Facilitate Equitable Energy Transitions**	$ 638,878
University of California, Santa Cruz	Ruth Langridge	**Integrating Land Use and Climate Change on California's Central Coast: Impacts and Adaptations for Local Communities**	$ 373,367

Round 2 Competition

$17.2 million is available for award.

Investments on the fifth priority that was not funded in Round 1:

- *Low GHG Transformative Technology Demonstration and Deployment*

Research Solicitation Release: October 2018.

Changes:

- *Develop transformative, scalable clean technologies that can help to achieve the State's 2030 and 2050 greenhouse gas reduction targets.*
- *Fund three or four large "Innovation Center" grants ($3 – 5 million)*
- *Focus on starting and ending technology readiness levels (TRLs)*

ROUND 2 OBJECTIVES

1) Investments should demonstrate potential to significantly reduce GHG emissions and should show potential to be easily replicable and scalable

2) Awardees' projects or portfolio of projects should provide a holistic approach towards addressing one or more of the identified research areas

3) Institutions should build strong and meaningful partnerships with the research and academic communities, private sector, and community-based organizations

4) Institutions should ensure that innovative technologies have direct and indirect benefits to California's most disadvantaged communities

Technology Area: Carbon Dioxide Removal

- Fourth California Climate Change Assessment demonstrates need for rapid reduction of greenhouse gas accumulation in the atmosphere.
- Carbon Dioxide Removal (CDR) technologies permanently remove CO_2 from the atmosphere through various processes:
  - *Engineered solutions such as direct air capture*
  - *Natural system solutions such as forest and soil management*
- Outreach identified this field as burgeoning, early stage R&D but in need of much greater investment.

Technology Area: Methane Reduction

- Methane has a Global Warming Potential of 25
  - 25 times more potent than CO_2 as greenhouse gas
- Significant reduction in methane emissions must occur for California to achieve its 2030 and 2050 climate goals.
- Methane is roughly 9% of California's total emissions.
- Three biggest sources of methane emission:
  - Agriculture—55%
  - Industry—20%
  - Landfills—21%

Technology Area: Heating, Cooling, and Thermal Storage Systems

- Heating and cooling places stress on electrical grid and will continue to do so as extreme weather events continue to become worse and more common.
- Additionally, cooling systems often use Hydrofluorocarbons (HFCs), potent greenhouse gases with a Global Warming Potential up to 1,430.
- Outreach identified significant opportunities to invest in cleaner and more efficient heating and cooling systems.
- At the core of SGC's mission of sustainable and resilient communities—cleaner systems promote climate adaptation and mitigation.

ROUND 2 TIMELINE

TASK	DATE
SGC COUNCIL MEETING: Adopt Updated Research Investment Plan	September 25
SGC COUNCIL MEETING: Direct staff to develop RFP	September 25
Round 2 Notice of Request for Proposals Released	Early October
Webinar—Proposal Submissions	Mid-October
Application Submission Deadline	Early November
Proposal Review Period	November
External Advisory Committee Meeting	Late November
Interagency Committee Award Recommendation Meeting	Early December
List of Award Recommendations Posted	December 10
SGC COUNCIL MEETING: Awards Approved by the Council	December 20